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Patent
Docket No.: 56763US002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

In re Application of:
Daniel J. McGURRAN et al.

Serial No.: 09/872,532
Filed: June 1, 2001
For: Color Stable Pigmented Polymeric
Films Having Dyes For Color
Adjustment

Group Art Unit: 1773
Examiner: Sheeba Ahmed

BRIEF ON APPEAL

Board of Patent Appeals
and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

| CERTIFICATE OF MAILING | |
|--|---|
| I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Board of Patent Appeals and Interferences, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on: | |
| 28 Oct. 2003 Date | Stephen C. Jensen Signed by: Stephen C. Jensen |

Dear Sir:

This is an appeal from the Office Action dated 04/24/2003 finally rejecting pending claims 1-21. Applicants filed a Notice of Appeal on July 28, 2003 (via certificate of mailing, with a deposit date of July 23, 2003).

This Brief is being filed in triplicate. Please charge the fee required under 37 CFR §1.17(c) for the appeal to Deposit Account No. 13-3723. Other than the fee for the 1-month extension of time provided below, no additional fee or petition is believed to be due; however, if any such fee or petition is required, they are hereby requested and should be charged to Deposit Account No. 13-3723.

Appellants request the opportunity for a personal appearance before the Board of Appeals to argue the issues of this appeal. The fee for the personal appearance will be timely paid upon receipt of the Examiner's Answer.

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11/10/2003 AWONDAF1 00000040 133723 09872532
02 FC:1251 110.00 DA

Petition for 1-Month Extension Under Rule 136(a)

Applicants respectfully petition the Assistant Commissioner for Patents for an extension of time under the provisions of 37 CFR § 1.136(a). Please charge the following fee to Deposit Account No. 13-3723:

37 CFR § 1.17(a)(1) - Extension within first month.

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REAL PARTY IN INTEREST

The real party in interest is 3M Innovative Properties Company by virtue of a duly recorded assignment executed by the inventors. 3M Innovative Properties Company is a wholly owned subsidiary of 3M Company.

RELATED APPEALS AND INTERFERENCES

(None)

STATUS OF CLAIMS

Claims 1-21 are pending. Claims 1 and 14 are written in independent form, and claim 21 is a multiple-dependent claim, depending from claims 1 and 14. All of the pending claims are rejected.

STATUS OF AMENDMENTS

Applicants have made no amendments to the claims (or to the specification) subsequent to the Final Office Action of 04/24/2003, and, in fact, have made no such amendments at any time during the prosecution of the application.

SUMMARY OF THE INVENTION

The invention relates to color-stable polymeric optical bodies such as films and products made therefrom, for example, films that can be applied to a base transparent substrate such as a window or auto glass pane to provide a neutral color tint. The optical bodies include at least one layer of a thermoplastic polymer material having dispersed therein a particulate pigment. The optical body has a transmission of light within a wavelength band of interest within the visible spectrum of from 5 to 90%. The dispersed particulate pigment imparts a substantial transmitted color to the optical body that differs from a desired transmitted color. Accordingly, the optical body further includes at least one dye in an amount sufficient to adjust the transmitted color of the optical body to the desired transmitted color. See page 1 lines 1-16 and page 2 lines 22-31.

In some embodiments the at least one dye is added in an amount sufficient to adjust the transmitted color of the optical body to a substantially neutral gray (claims 1, 15). See FIG. 2 and page 14 lines 6-28. The neutral gray can be characterized using the L^* , a^* , b^* CIE color scale, where a^* and b^* are in the range of ± 5 , ± 3 , or ± 1 , or can be biased to have a very slight blue/green tint, whereby a^* and b^* are in the range of -1.5 ± 5 , -1.5 ± 3 , or -1.5 ± 1 (claims 2-7 and 16). See page 12 line 10 to page 13 line 9.

In some embodiments the particulate pigment has a mean diameter of no more than 500 nm (claim 18), 300 nm (claim 8), or 100 nm (claim 9). See page 3 lines 11-14 and page 9 lines 18-28. In some embodiments the optical body exhibits an internal haze of no more than 5% (claims 10, 14). See page 11 line 23 to page 12 line 5, and Tables 1-2 on pp. 21-22. In some embodiments the at least one dye is disposed in the at least one layer of thermoplastic polymer material (claim 11), or co-polymerized in the polymer material (claim 12). See page 14 lines 1-5. In some embodiments the at least one dye adjusts the transmitted color by no more than 15 units of a^* and by no more than 15 units of b^* (claims 13, 14). See page 13 lines 13-24. When the dye concentration is kept relatively low so that it has a minor effect on the percent transmission of the optical body compared to the effect of the particulate pigment, any dye degradation or instability beneficially has much less of an impact on transmitted color (and on percent

transmission) compared to a film in which the transmitted color and percent transmission are due solely or substantially to one or a combination of dyes.

In some embodiments, the at least one dye is disposed in the at least one layer of thermoplastic polymer material (claim 19), or the at least one layer is a single layer and the optical body consists essentially of the single layer (claim 17). See page 3 lines 21-22, page 8 lines 7-10, page 14 lines 1-5, and the Examples. In some embodiments, the at least one dye is co-polymerized in the polymer material (claim 20). See page 14 lines 1-5. In some embodiments, the body includes a rigid window member to which the at least one layer is laminated (claim 21). See page 1 lines 12-15, page 4 lines 18-19, and page 15 lines 12-22.

ISSUES ON APPEAL

1. Whether pending claims 1-20 are obvious under 35 U.S.C. § 103(a) by U.S. Patent 4,603,073 (Renalls et al.) in view of U.S. Patent 6,111,696 (Allen et al.).
2. Whether pending claim 21 is obvious under 35 U.S.C. § 103(a) by U.S. Patent 4,603,073 (Renalls et al.) in view of U.S. Patents 6,111,696 (Allen et al.) and 6,242,081 (Endo).

GROUPING OF CLAIMS

For purposes of this appeal:

claims 1-9, 11, 12 and 21/1 stand or fall together; and

claims 10, 14-20 and 21/14 stand or fall together.

Claims 10, 14-20, and 21/14 are submitted to be separately patentable from the remaining claims for purposes of this appeal because they specify an internal haze for the optical body of “no more than 5%” (claim 10), or “less than or equal to 5%” (claim 14 and its dependent claims). The primary reference, ‘073 Renalls et al., as explained below, is directed to *opaque* polyester films useful as a film base for magnetic recording media. The reason for the opacity is purposeful, so that an index hole in diskette recorders can be optically sensed. Pigmented films processed in such a way as to have low haze would be undesirable for Renalls et al. compared to those processed to have high haze, because the latter would presumably be better at blocking the optical beam in the diskette recorder.

ARGUMENTS OF APPELLANT

(i) Rejections under 35 U.S.C. § 112, 1st paragraph

(none)

(ii) Rejections under 35 U.S.C. § 112, 2nd paragraph

(none)

(iii) Rejections under 35 U.S.C. § 102

(none)

(iv) Rejections under 35 U.S.C. § 103

Issue #1 on Appeal

The Final Office Action rejected claims 1-20 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 4,603,073 (Renalls et al.) in view of U.S. Patent 6,111,696 (Allen et al.). The Office Action contends, *inter alia*, that Renalls et al. disclose a single or multilayer polyester film corresponding to the optical body of the claimed invention, that it would have been obvious to add a dye to the film, and that the limitations relating to a*, b*, transmission of light, and haze values can be optimized by one of ordinary skill. Applicants respectfully request the Board to overturn this rejection.

It is axiomatic that to establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest each and every limitation of the rejected claim(s). See M.P.E.P. § 2142. Furthermore, each prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. See *W.L. Gore Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). In the present application, independent claims 1 and 14 recite pigmented optical bodies exhibiting a transmission of light within a wavelength band of interest within the visible spectrum of from 5% to 90%. In contrast, Renalls et al. is directed specifically to *opaque* polyester films useful as a film base for magnetic recording media. See e.g. the Title, Abstract, and Field of the Invention of Renalls et al. In common usage, “opaque” refers to articles that are (or are intended to be) “impervious to the passage of light”. American Heritage Dictionary, Second College Edition (Houghton Mifflin Co., 1991), p. 870. Regarding the desired opacity, Renalls et al. teach “no more than 0.5%” (see col. 1 lines 17-18, Example 1 and 2 transmission data in the

table at column 7, and claim 5) and “only about ¼%” (see col. 4 lines 1-2) at a wavelength of 940 nm. Such opacity values are purposeful, for optical sensing of an index hole in diskette recorders. (See col. 1 lines 15-16.) The Examiner correctly points out that these opacity values are specified at 940 nm, outside of the visible wavelength region. However, the Examiner points to nothing to suggest that the films of Renalls et al. would have a percent transmission that anywhere approaches the transmission range within the visible spectrum as specified in claims 1 or 14. On the contrary, Applicants note that PCT Publication WO 02/41045 (cited previously by Applicants and of record in the present application) shows in FIG. 2 thereof a plot of transmission versus wavelength from 400 nm out to 800 nm for a polymeric core comprising polyethylene terephthalate and carbon black particulate (see curve 202), and the percent transmission *decreases* as one moves from right to left along the graph.

Although the Examiner is also correct to point out that the percent weight of particulate called out in Renalls et al. (0.1 to 3%) overlaps somewhat with the percent weight recited in pending independent claim 1 (between 0.01 and 1%), this parameter does not by itself, nor even in combination with only a particulate particle size range, dictate the percent transmission of the optical body. This is of course consistent with the fact that pending claim 1, for example, not only recites (1) a range for the weight percent of the particulate pigment, and (2) an upper limit on the mean diameter of the particulate pigment, but also (3) a range of the percent transmission of the optical body. Because Renalls et al. not only fail to teach or suggest a pigmented optical body with the specified percent transmission, but teach away from such a body, the obviousness rejection of claims 1-20 cannot be sustained.

Applicants also wish to point out that although Allen et al. teach that the films and optical devices *of that invention* may be treated with inks, dyes, or pigments to alter their appearance or to customize them for specific applications (see column 25 line 30 ff.), the reference provides no rationale, suggestion, or hint to motivate one of ordinary skill to add a dye to the already opaque pigmented films of Renalls et al., much less to add a dye “to adjust the transmitted color of the optical body to a substantially neutral gray” (claim 1), or “in an amount effective to adjust the color of the optical body by not more than 15 units of

a* and by no more than 15 units of b*” (claim 14). Moreover, even if such a suggestion existed, the act of adding a dye to the films of Renalls et al. would *still further increase their opacity*, again teaching away from the percent transmission range called out in claims 1 and 14. For these additional reasons, the rejection of claims 1 and 14, and their dependent claims 2-13 and 15-20, should be withdrawn.

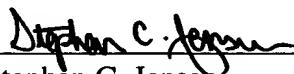
Issue #2 on Appeal

The Final Office Action rejected claim 21 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 4,603,073 (Renalls et al.) in view of U.S. Patents 6,111,696 (Allen et al.) and 6,242,081 (Endo).

In response, Applicants note that claim 21 depends in the alternative from claim 1 or claim 14, and is submitted to be allowable at least for the reasons set forth above in connection with those claims. Applicants therefore respectfully request the Board to overturn this rejection for the same reasons.

For the foregoing reasons, the Board is respectfully requested to overturn the rejection of pending claims 1-21.

Respectfully submitted,



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Date: October 28, 2003

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APPENDIX: PENDING CLAIMS

1. A pigmented optical body comprising at least one layer of a thermoplastic polymer material, wherein dispersed within the polymer material is between 0.01 and 1 percent by weight of a particulate pigment having a mean diameter no more than 500 nm, wherein the optical body exhibits a transmission of light within a wavelength band of interest within the visible spectrum of from 5% to 90%, wherein the dispersed particulate pigment imparts a substantial transmitted color to the optical body, the optical body further comprising at least one dye added in an amount sufficient to adjust the transmitted color of the optical body to a substantially neutral gray.
2. The body of claim 1, wherein the optical body has an a* value and a b* value in the range of ± 5 .
3. The body of claim 2, wherein the optical body has an a* value and a b* value in the range of ± 3 .
4. The body of claim 3, wherein the optical body has an a* value and a b* value in the range of ± 1 .
5. The body of claim 1, wherein the optical body has an a* value and a b* value in the range of -1.5 ± 5 .
6. The body of claim 5, wherein the optical body has an a* value and a b* value in the range of -1.5 ± 3 .
7. The body of claim 6, wherein the optical body has an a* value and a b* value in the range of -1.5 ± 1 .

8. The body of claim 1, wherein the particulate pigment has a mean diameter of no more than 300 nm.
9. The body of claim 8, wherein the particulate pigment has a mean diameter of no more than 100 nm.
10. The body of claim 1, wherein the body exhibits an internal haze of no more than 5%.
11. The body of claim 1, wherein the at least one dye is disposed in the at least one layer of thermoplastic polymer material.
12. The body of claim 1, wherein the at least one dye is co-polymerized in the polymer material.
13. The body of claim 1, wherein the at least one dye adjusts the transmitted color of the optical body by no more than 15 units of a^* and by no more than 15 units of b^* .
14. A pigmented optical body comprising at least one layer of a thermoplastic polymer material having dispersed therein a particulate pigment in an amount effective to produce a tint perceptible to an observer, wherein the optical body exhibits a transmission of light within a wavelength band of interest within the visible spectrum of from 5 to 90% and exhibits an internal haze of less than or equal to 5%, the optical body further comprising at least one dye in an amount effective to adjust the color of the optical body by no more than 15 units of a^* and by no more than 15 units of b^* .
15. The body of claim 14, wherein the body has a substantially neutral gray color.
16. The body of claim 15, wherein the body has an a^* value and a b^* value in the range of -1.5 ± 1 .

17. The body of claim 14, wherein the at least one layer is a single layer and the optical body consists essentially of the single layer.
18. The body of claim 14, wherein the particulate pigment has a mean diameter of no more than 500 nm.
19. The body of claim 14, wherein the at least one dye is disposed in the at least one layer of thermoplastic polymer material.
20. The body of claim 14, wherein the at least one dye is co-polymerized in the polymer material.
21. The body of either claim 1 or claim 14, wherein the body further comprises a rigid window member to which the at least one layer is laminated.